

Exhibit No.: 07
Issue(s): Utility Waste Landfill
Design/Engineering Review of the
Revised CPA Submission
Witness: Steven F. Putrich, P.E.
Sponsoring Party: Union Electric Company
Type of Exhibit: Supplemental Testimony
Case No.: EA-2012-0281
Date Testimony Prepared: January 24, 2014

MISSOURI PUBLIC SERVICE COMMISSION

Case No. EA-2012-0281

SUPPLEMENTAL TESTIMONY

OF

STEVEN F. PUTRICH, P.E.

ON

BEHALF OF

**UNION ELECTRIC COMPANY
d/b/a AMEREN MISSOURI**

**Cleveland, Ohio
January 24, 2014**

Ameren Exhibit No. 07
Date 3-31-2014 Reporter Stewart
File No. EA-2012-0281

SUPPLEMENTAL TESTIMONY

OF

STEVEN F. PUTRICH, P.E.

CASE NO. EA-2012-0281

1 **Q1. Please state your name and business address.**

2 A. Steven F. Putrich, P.E., 6500 Rockside Road, Suite 200, Cleveland, Ohio 44131.

3 **Q2. By whom are you employed and in what capacity?**

4 A. I am employed by Haley & Aldrich, Inc., as the National CCR Program Lead and as Senior
5 Vice President of Engineering.

6 **Q3. Are you the same Steven F. Putrich, P.E., who previously filed surrebuttal and sur-**
7 **surrebuttal testimony in this matter?**

8 A. Yes.

9 **Q4. What is the purpose of your supplemental testimony?**

10 A. The purpose of my testimony is to report on my review of the revised Construction Permit
11 Application (CPA) for the proposed utility waste landfill (UWL) at the Labadie Energy Center submitted by
12 Ameren Missouri to the Missouri Department of Natural Resources (MDNR) in December 2013. In
13 particular, I will address the impact, if any, of that review on the opinions expressed in my previously
14 submitted testimonies.

15 **Q5. What documents have you reviewed in connection with preparing this supplemental**
16 **testimony?**

17 A. I have reviewed the previously submitted CPA, which was included as Schedule CJG-S23
18 to Mr. Giesmann's surrebuttal testimony, correspondence and comments from Franklin County's

1 Independent Registered Professional Engineer (IRPE), and the responses to the IRPE's comments from
2 Ameren Missouri, and the revised CPA submitted to the MDNR in December 2013.

3 **Q6. Please describe the changes that were made to the CPA.**

4 A. In general, the CPA included revisions to the Groundwater Monitoring Program (the
5 installation of seven additional groundwater monitoring wells), some changes to the discussion of the
6 management of leachate using tanks and regarding the liquefaction analyses, some minor modifications to
7 slope stability analyses, some minor adjustments to the construction sequence, and some minor
8 adjustments to the construction quality assurance procedures and erosion protection materials. There
9 were also some additional minor revisions made to correct several clerical errors.

10 **Q7. Were any of those changes significant to your review of the proposed UWL?**

11 A. None of them were significant with regard to the design, engineering or construction plans
12 for the UWL. The most significant change in the revised CPA is the addition of groundwater monitoring
13 wells, which as I understand it will be addressed by Messrs. Giesmann and Gass in their supplemental
14 testimonies. As noted, all of the design, engineering and construction revisions were minor, but I will
15 comment on three of those revisions here; that is, on the clarifications regarding the liquefaction and
16 stability calculation discussion, as well as on the additional details provided on the handling of leachate
17 from the UWL.

18 **Q8. Did any of the changes to the CPA, or any of the other information you reviewed in**
19 **connection with preparing this testimony, affect or change any of the opinions you expressed in**
20 **your previously filed testimonies?**

21 A. No. My previously expressed opinions remain unchanged.

22 **Q9. More specifically, do the revisions to the CPA concerning the liquefaction and**
23 **stability calculations affect your opinion in any way?**

1 A. No. they do not. The additional comments in the revised CPA were made to clarify the
2 sources of values used in the computer modeling programs to produce the calculations. Data from site
3 investigations was used to clarify that the values output by the models are specific to the geotechnical
4 conditions under and within the proposed UWL. Emphasis was made to ensure that the reader of the
5 revised CPA understood that the values reflected in the outputs from these geotechnical computer model
6 analyses are conservative. These practices are accepted by the MDNR, and are generally accepted
7 engineering practices. The factors of safety for liquefaction and stability meet generally accepted
8 engineering standards.

9 **Q10. You mentioned that there were some additions to the CPA relating to the handling of**
10 **leachate. Why didn't these changes affect your opinion regarding the appropriateness of the**
11 **design and engineering of the UWL?**

12 A. The revisions provided more specificity for the locations and sizes of the leachate
13 collection tanks, which had been omitted from the earlier plan drawings. These drawings have been
14 updated to include proposed tank farms. Leachate storage tanks will be used to hold water that has either
15 come into contact with CCRs (contact water) or has infiltrated through the stacked CCRs in the landfill
16 (UWL leachate) until beneficial reuse or transportation off-site is coordinated. The size and number of
17 tanks is proposed to be adjusted as the need is determined based on landfill footprint and exposed face. If
18 these tanks cannot hold the volume of water produced, ponds are available for temporary storage of the
19 water as a backup, with locations varying depending on which cell is being constructed or operated at any
20 given time. These additional details confirm the appropriateness of the leachate handling for the proposed
21 UWL.

22 **Q11. You earlier noted that neither the CPA revisions nor the other information you**
23 **reviewed impacted your previously-expressed opinions. Were any of the CPA revisions needed to**

1 **ensure that the proposed UWL was properly designed, safe, protective of human health and the**
2 **environment and in compliance with applicable regulations, including the USEPA's proposed UWL**
3 **regulations?**

4 A. No, they were not. The revisions that were made to the CPA do not change my
5 professional opinions regarding the proposed UWL. It remains my opinion that the proposed UWL is
6 properly designed, safe, protective of human health and the environment and in compliance with applicable
7 regulations, including the USEPA's proposed CCR regulations.

8 **Q12. Mr. Putrich, does this conclude your supplemental testimony?**

9 A. Yes.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of the Application of Union Electric)
Company d/b/a Ameren Missouri for Permission and)
Approval and a Certificate of Public)
Convenience and Necessity Authorizing)
it to Construct, Install, Own,) File No. EA-2012-0281
Operate, Maintain, and Otherwise Control and Manage)
A Utility Waste Landfill and Related Facilities at its)
Labadie Energy Center.)

AFFIDAVIT OF STEVEN F. PUTRICH, P.E.

STATE OF OHIO)
) ss
COUNTY OF CUYAHOGA)

Steven F. Putrich, P.E., being first duly sworn on his oath, states:

1. My name is Steven F. Putrich, P.E. I work in the City of Independence, Ohio, and I am employed by the environmental and engineering consulting firm of Haley & Aldrich, Inc.
2. Attached hereto and made a part hereof for all purposes is my Supplemental Testimony on behalf of Union Electric Company d/b/a Ameren Missouri consisting of 4 pages, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct.


Steven F. Putrich, P.E.

Subscribed and sworn to before me this 24th day of January, 2014.


Notary Public

My commission expires:

JEANNINE MURRAY
NOTARY PUBLIC • STATE OF OHIO
Recorded in Medina County
My commission expires Mar. 11, 2018